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Manipulating Mammalian Genome by Gene Targeting

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The development of strategies which allow the inactivation of specific murine genes by homologous recombination in embryonic cells has revolutionized biological science in the last 10 years. A large number of mice carrying genetic lesions, generated by gene targeting technology, has tremendously increased our knowledge in many areas of biology, culminating in the identification of mouse models for human genetic disorders. These findings have been recently complemented by "conditional" gene targeting technology, allowing gene inactivation in a defined tissue and at a specific time point during development or adulthood, thereby extending the sophistication and potential of this technology.

Key words: base sequence; DNA, recombinant; genetic engineering; genetic library; genetic techniques; mice, knockout; mice, transgenic; recombination, genetic; vectors, genetic